ME-7386

HITACHI

Model VM-905(U,C,E,K)

Video Monitor

SERVICE MANUAL

Hitachi Denshi, Ltd.

TOKYO, JAPAN

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N O T I C E

This Service Manual describes the most typical product of this model. If there are any specific differences between this Manual and the servicing unit, please refer to the schematic diagram delivered separately for that serial number.

Model VM-905(U,C,E,K)
Video Monitor
Service Manual

1. OUTLINE

The Hitachi VM-905 is a solid state 9 inch video monitor designed to receive video signals from a Hitachi CCTV camera, VTR or any other similar system. The VM-905 displays those signals with a high level of picture quality.

2. SPECIFICATIONS

Video input signals:	1.0Vp-p composite video, sync(0.3Vp-p) negative
Input impedance:	75Ω or high impedance for bridge connection
Frequency response:	100kHz - 10MHz ±3dB
Resolution:	Holizontal - over 700 lines Vertical - over 350 lines
Deflection linearity:	1% or better at center 2% or better at corners(with respect to picture height)
High voltage:	about 10.5kV
Picture tube:	230AYB4, 9-inch, 90-degree deflection, implosion protection type.
Ambient temperature:	-10 - 50°C (14 - 122°F) (35 - 85% humidity)
Power source:	VM-905U 117V AC, 60Hz VM-905C 117V AC, 60Hz VM-905E 220V AC, 50Hz VM-905K 240V AC, 50Hz
Power consumption:	25W
Dimensions:	218(W) × 218(H) × 233 (D)mm (89/16 × 89/16 × 93/16 in)
Weight:	6 kg (13.2 lbs)

The design, specifications and performance are subject to change without notice.

3. EXPLANATION OF CIRCUITRY

3-1 Video amplifier circuit (Q101-Q105)

The input circuit is a buffer circuit of an emitter follower. The amplifier circuit has four stages and utilizes cathode drive system.

The contrast is variable between maximum and near zero.

3-2 DC restoration circuit (D101)

This circuit contains a diode clamp circuit. ON-OFF operation is made by the switch SW 102 on the board, and this switch is set to OFF in the models U and C, while it is set to ON in the models E and K.

The SUB BRIGHT control VR 101 must be adjusted whenever the position of the switch is changed. Refer also to 5.2 adjusting the SUB BRIGHT control (VR101) of VR101.

3-3 Horizontal deflection circuit (Q801-Q806)

This circuit is composed of sync separator (Q801), AFC (Q802, Q803), oscillator (Q804), driver (Q805) and output circuit (Q806).

The AFC circuit uses saw-tooth AFC and also an emitter follower (Q803) to increase the loop gain. The oscillator consists of a blocking oscillator. The output pulse is approximately 180Vp-p and the pulse width is 12μS. There is also a linearity coil(L804) in order to improve the deflection linearity.

3-4 High voltage circuit (T803)

The flyback transformer T803, the high voltage rectifier (silicon diode) and anode cap are combined in a single unit and generate a high voltage of approximately 10.5kV.

3-5 Vertical deflection oscillator circuit (Q851)

Unlike a conventional blocking oscillator, this circuit employs a thyristor (3SF11Q) which consists of PNP and an NPN transistors integrated into a single package.

Positive feedback between the PNP and NPN transistors produces oscillation and generates saw-tooth in the time-constant circuit consisting of R857 and C854.

Fig. 1 shows the circuit configuration of the thyristor.

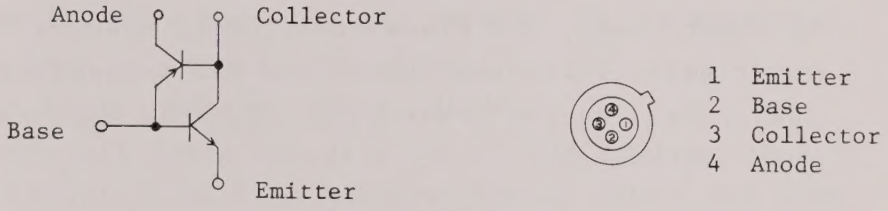

Fig. 1

Although the trigger pulse can be applied to the base, it is applied to the collector in the case of the VM-905 series. If applied to the base, the trigger pulse must have positive polarity, but when applied to the collector, it must have negative polarity.

Furthermore, the sync lock-in range depends entirely on the amplitude of the trigger pulse and on the hFE of the thyristor's PNP transistor.

The table below gives the range of hFE for the PNP transistors of different grades of 3SF11's.

hFE (PNP)	0.19 - 1.2	0.75 - 2.5
Grade	P	Q

The VM-905 series uses 3SF11Q. If the Q grade is not used, the resulting sync lock-in range will not be sufficient. This point should be borne in mind. C855 is paralleled with C854 in order to improve linearity when the field frequency is 50Hz.

3-6 Vertical deflection output circuit (Q852 - Q855)

Conventional circuits employ an inductor load output circuit, but the VM-905 series incorporates a complementary circuit which dispenses with the choke coil.

The two output transistors (Q854, Q855) have a compensatory symmetrical effect.

In other words, NPN transistor (Q854) handles the upper part of the saw-tooth, and PNP transistor (Q855) handles the lower part. In this way, they work together.

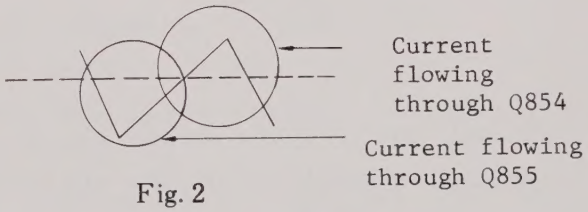

Fig. 2

Finally, the vertical deflection yoke impedance has been reduced to about one quarter of what is used to be with conventional circuits.

3-7 Blanking circuit (Q856)

If the vertical deflection circuit is made complementary, a sufficiently large blanking pulse cannot be obtained, and so in order to rectify this problem, it is necessary to include a switching circuit and generate the blanking pulse anew.

Horizontal flyback pulses and vertical pulses(Fig.3) are sent to the base of Q856, which generates the horizontal/vertical blanking pulses (Fig. 4).

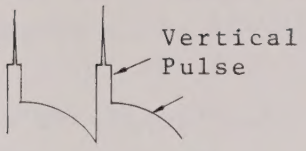

Fig. 3

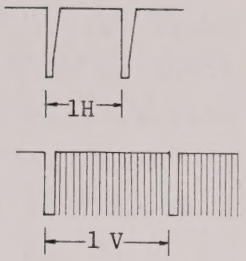

Fig. 4

Here, the width of the horizontal blanking pulse during the V period undergoes a change because of the (A) of the vertical output waveform in Fig. 8. D853 and R876 clip the (A) portion of the waveform and help to reduce this effect.

3-8 Spot killer circuit (Q856, D854)

Almost all conventional spot killers used to operate by reducing the high voltage, which caused the beam current to flow, as soon as the power supply was turned off, as well as causing a certain amount of deflection.

In the VM-905 series, however, as soon as the switch is turned off, the spot killer circuit reduces the G_1 potential far enough to cause beam cut-off, and it maintains this potential while the heater is cooling down.

This circuit operation can be explained as follows: as soon as the switch is turned off, Q856 is turned on, grounding the + side of C867. This biases the - side of C867 to a - potential equal to the potential difference to which C867 has been charged. The beam is then cut off. D854 is included to increase C867's discharge time constant sufficiently.

3-9 Power supply circuit (Q901, IC901)

IC901 contains an error detector, amplifier and

Zenor diode. Since the output capacity of the IC901 is only 30mA, it is connected to an output booster transistor (Q901).
The principal features of the power supply is that fluctuations in the output voltage are reduced to 18 ±0.2V and that there is no need to make use of a variable resistor for adjustment.

4. ADJUSTMENTS

4-1 Adjusting the H.FREQ control (VR 801)
Feed in the standard signal and insert a 0.1μS plastic capacitor between the ground and the base terminal of Q802. Turn the H.HOLD control fully clockwise (in the direction of increasing frequency), and adjust the H.FREQ control so that the picture becomes stationary.

4-2 Adjusting the SUB BRIGHT control (VR 101)
Regardless of the position of the DC CLAMP switch (SW 102), the brightness can be controlled by the SUB BRIGHT control.
When the DC CLAMP control is OFF, turn the SUB BRIGHT control fully clockwise (maximum brightness).
When the DC CLAMP is ON , adjust so that the raster is faintly visible, with the BRIGHT control (VR104) at the maximum and the CONT control (VR 103) at the minimum.
As regards the standard settings, with Models J,U, and C, the DC CLAMP control is set to OFF, and with Models E and K, it is set to ON.
The adjusting procedure for DC CLAMP ON is different from that for DC CLAMP OFF, and this point should be carefully borne in mind.

4-3 Adjusting the horizontal amplitude, WIDTH (L 803)

With the CONT BRIGHT control at the maximum, turn the WIDTH coil (L803) with a core driver so that the overscan is 110% ±2%.

In this case use the horizontal blanking signal with a 10.8μS width. If such a signal is not available, make sure that the adjustment procedure is altered accordingly.

Example of adjustment: When the horizontal blanking width is 10.8μS and when this has to be adjusted with 16-interval grating signals, then adjust these signals to 14.4±0.3 intervals.

4-4 Adjusting the V. LIN control (VR 851) and HEIGHT control (VR 852)

Alternately, adjust both the V.LIN and HEIGHT controls until the upper and lower widthes of the picture are identical, and also adjust the underscan to 110%±2%.

Example of how to adjust the vertical amplitude: When adjusting a vertical blanking width of 20Hz with a 12-interval grating signal, adjust so that these signals' intervals are 10.8±0.25.

4-5 Adjusting the FOCUS control (VR 102)

Adjust so that the optimum focus is obtained at every corners and at the center.

4-6 Centering adjustment

Adjust the centering magnet on the deflection yoke, so that a picture is symmetrical and the linearity is within 5% of a picture height, when the H. HOLD control at the mid-position. Should a portion of the raster disappear in this case, adjust the centering magnet so that the picture is centered when the mechanical position of the H. HOLD control with-

in ±40% with respect to its mid-position. Thus allow every portion of the raster to appear.
If the center is improperly set, the focus sometimes very badly deteriorate at corners.

4-7 Adjusting the aligment of the deflection yoke
Adjust the difference between the left and right edges of a horizontal line for with in 2mm and then fasten the deflection yoke with the clamp screw.

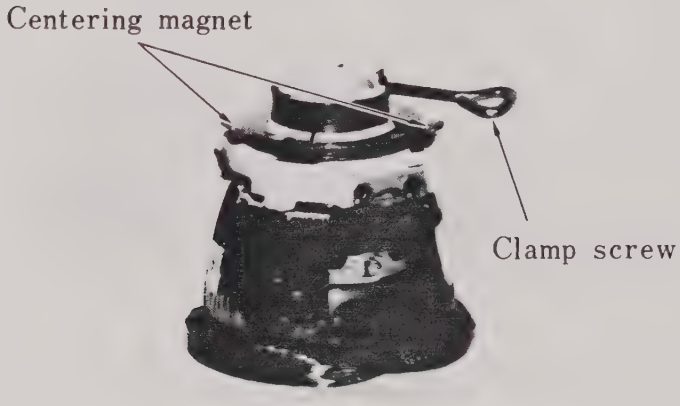

Fig. 5

4-8 Adjusting the horizontal deflection linearity
The horizontal deflection linearity is subject to the centering adjustment.
Center the picture with the H. HOLD positioned within an angle of ±40% from its mid-point. Without causing any portion of the raster to disappear, and without making any deflection flaws appear on the picture, slide the center along in a horizontal direction with the centering magnet.
The linearity on the right is extended if the center is shifted to the right.

5. CONVERTING THE UNDERSCAN AND EXTERNAL SYNC

5-1 Converting the underscan

1) Turn the WIDTH control (L803) and reduce the horizontal amplitude.
2) Remove C819 (0.01μF).
3) Adjust the WIDTH control until the appropriate underscan is obtained. The horizontal amplitude at the normal underscan is set at 160mm.
4) Turn the HEIGHT control (VR 851) and the V. LIN control (VR 852) so that the appropriate underscan and linearity are obtained. The vertical amplitude at the normal underscan is set at 120mm.
   (Adjust the aspect ratio for 4:3)
5) Adjust with the centering magnet so that the picture is positioned in the center.
6) If the above adjustment does not result in a sufficient underscan, connect a 27kΩ resistor between IC ⑦ and B + on the back of the board.

5-2 Converting to external sync.

1) Unfasten the name plate.

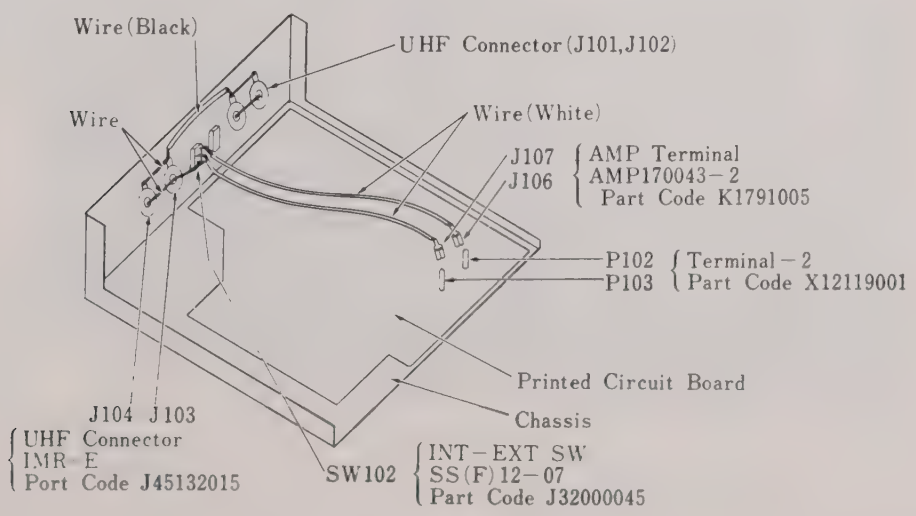

Fig. 6

2) Attach the UHF connectors (IMR-E) to SYNC IN-OUT of the chassis.
3) Mount the INT-EXT selector switch.
4) Mount the board terminals (2) on P102 and P103.
5) Wire the connectors and the switches as in Fig. 6.
6) Make use of a terminal connector for the 75Ω terminal.
7) Affix the name plate to the lower right-hand part of the rear cover.

6. CONSTRUCTION

Refer to the mechanical parts list for the figures in the circles.

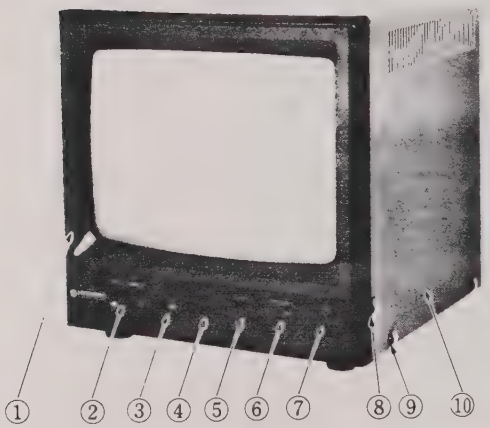

Fig. 7

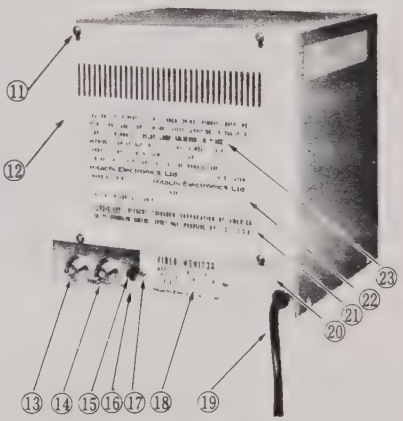

Fig. 8

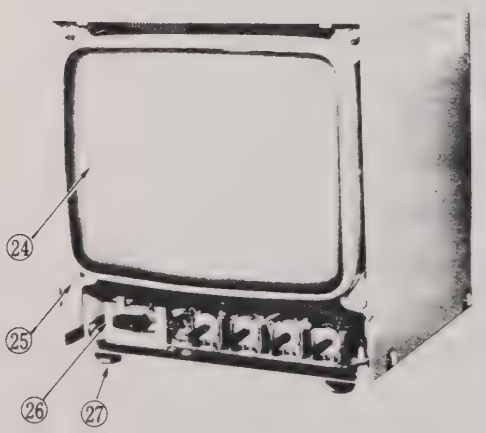

Fig. 9

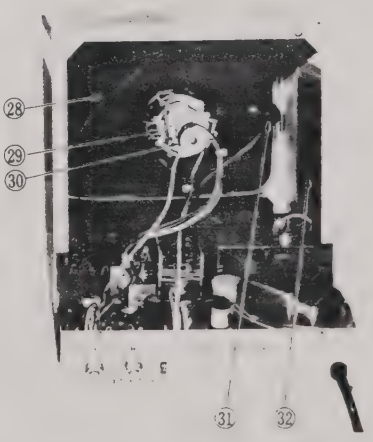

Fig.10

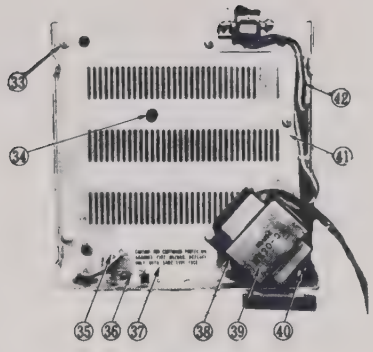
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Fig.11

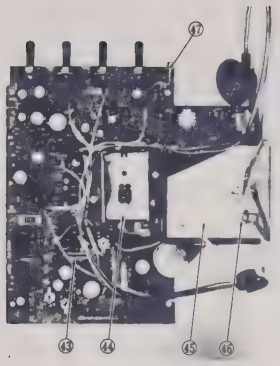
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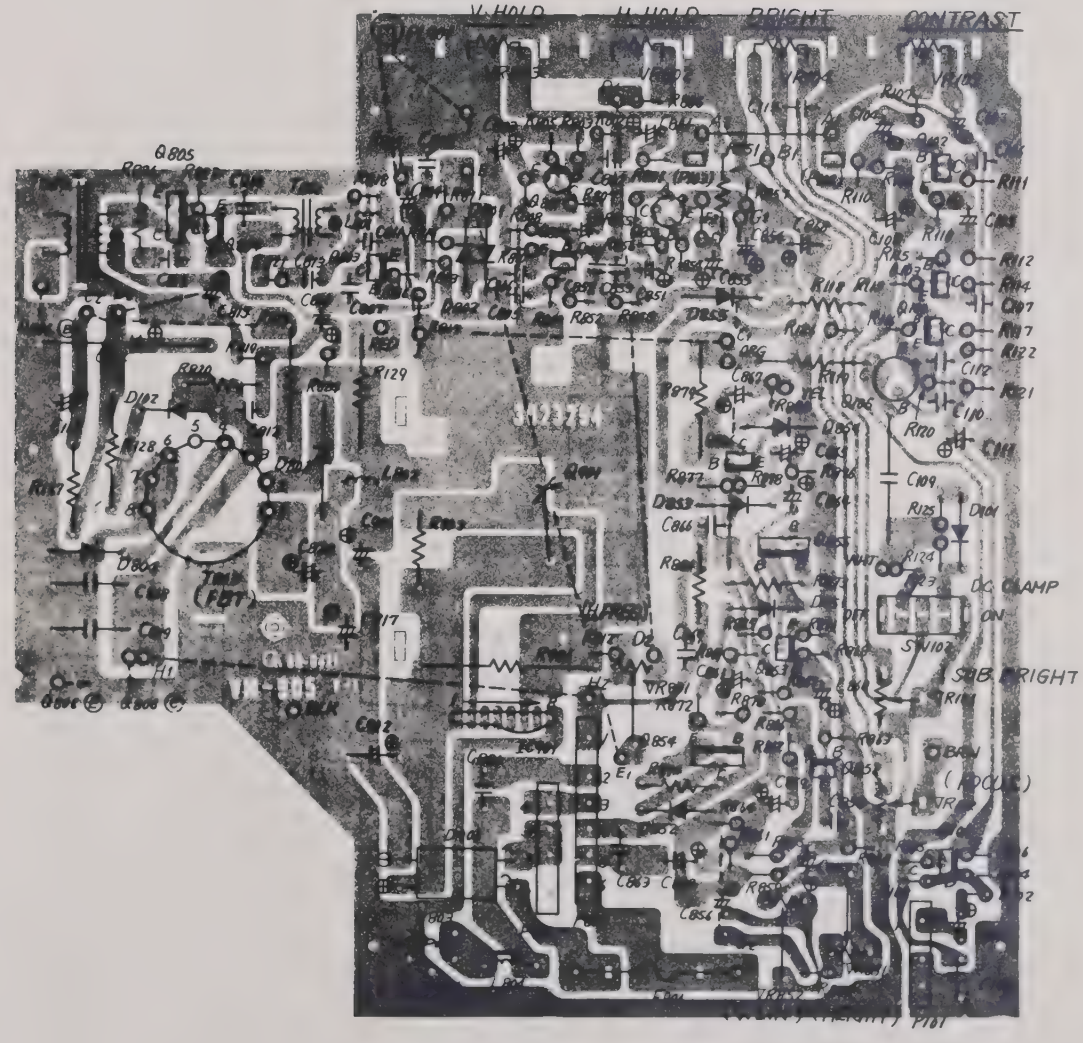
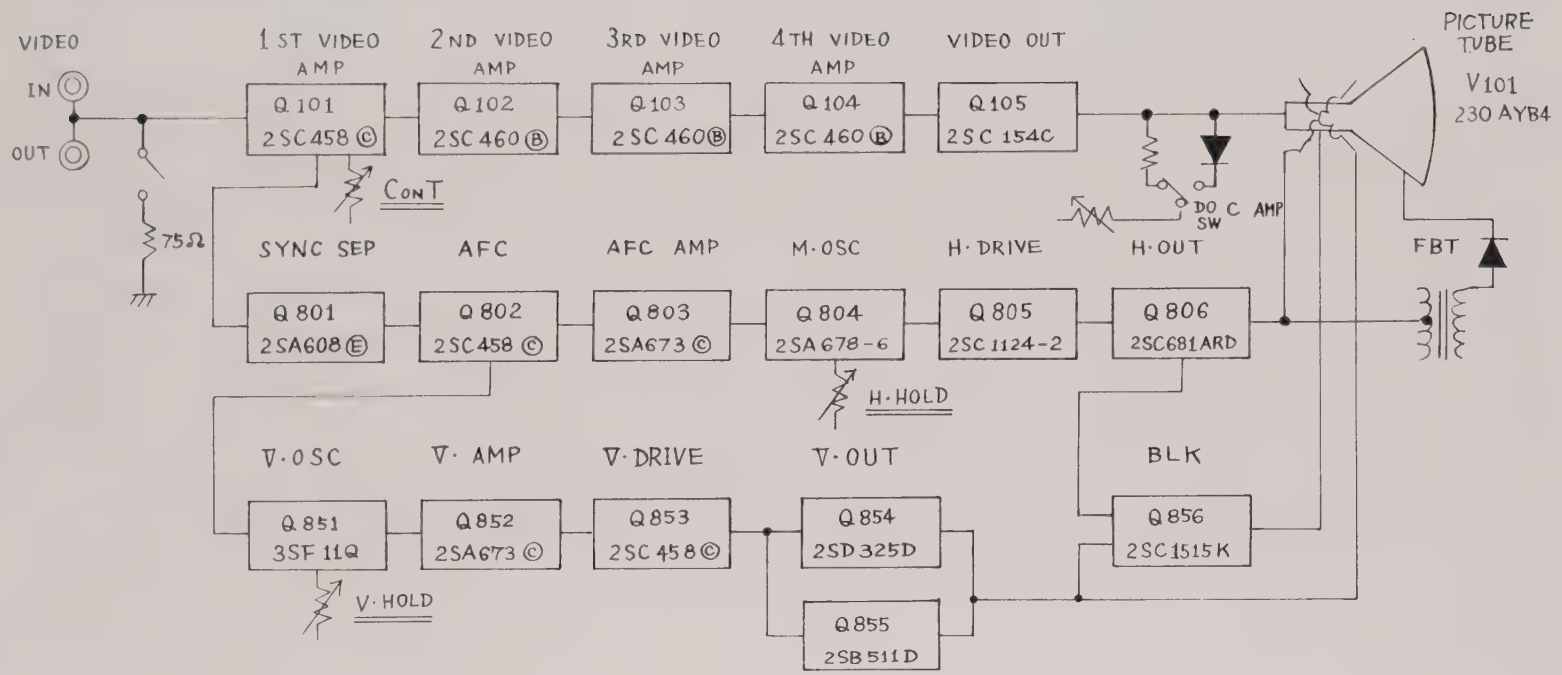
Fig.12


V.HOLD
H.HOLD
BRIGHT
CONTRAST
Q805
DC CLAMP
SUB BRIGHT
(FOCUS)

7. BLOCK DIAGRAM



Model VM-905 (U,C,E,K)

VIDEO MONITOR

BLOCK DIAGRAM

8. ELECTRICAL PARTS LIST AND SCHEMATIC DIAGRAM

PCB Parts List

Symbol	Description	Remarks	Part Code
	Transistors		
Q101	2SC458Ⓒ		H23300017
102	2SC460Ⓑ		H23300008
103	"		"
104	"		"
105	2SC154C		H23300007
801	2SA608Ⓔ		H23100023
802	2SC458Ⓒ		H23300017
803	2SA673Ⓒ		H23100024
804	2SA678-6		H23100008
805	2SC1124-2		H23300087
806	2SC681A-RD		H23300015
851	3SF11 (Q) (Thyristor)		H25500006
852	2SA673Ⓒ		H23100024
853	2SC458Ⓒ		H23300017
854	2SD325Ⓓ		H23400025
855	2SB511Ⓓ		H23200018
856	2SC1515K		H23300123
901	2SC1060Ⓑ		H23300075
IC901	RD3183S (I.C.)		H31200070
	Diode		
D101	1S2076A		H21400015
102	V06E		H21100019
801	IN34A		H21200001
802	"		"
803	U06C		H21400016
804	V09E		H21400019
851	1S2076A		H21400015
852	V06C		H21100018
853	1S2076A		H21400015
854	V06C		H21100018
855	"		"
901	M4C-1		H21800001

Symbol	Description	Remarks	Part Code
	Var. Resistors		
VR101	Carbon VR V18K3-6[4US]B200kΩ		H55451033
102	" " B1MΩ		H55451031
103	" RC-0031-B1kΩ	CONT	H55443048
104	" " B500kΩ	BRIGHT	H55443050
801	V10K8-4-2 B2kΩ		H55422003
802	RC-0031-B1kΩ	H.HOLD	H55443048
851	V10K8-4-2 B10kΩ		H55422006
852	" B5kΩ		H55422005
853	RC-0031-B5kΩ	V.HOLD	H55443049
	Resistors		
R102	Carbon ELR1/4W1,000Ω ±5%		H51523102
103	" " 4.7kΩ "		H51523473
104	" " 33kΩ "		H51523333
105	" " 220Ω "		H51523221
106	" " 1,200Ω "		H51523122
107	" " 470Ω "		H51523471
108	" " 15kΩ "		H51523153
109	" " 3,300Ω "		H51523332
110	" " 1,000Ω "		H51523102
111	" " 470Ω "		H51523471
112	" " 33kΩ "		H51523333
113	" " 1,800Ω "		H51523182
114	" " 390Ω "		H51523391
115	" " 39kΩ "		H51523393
116	" " 100Ω "		H51523101
117	" " 1,500Ω "		H51523152
118	" R1/2W 100Ω "		H51633101
119	" R1W 10kΩ "		H51643103
120	" ELR1/4W 560Ω "		H51523561
121	" " 680Ω "		H51523681
122	" " 10kΩ "		H51523103
123	" " 560kΩ "		H51523564
124	" " 1MΩ "		H51523105
125	" " 10kΩ "		H51523103
126	" " 330kΩ "		H51523334
127	Metal RS1BF1W2,200Ω "		H53813222
128	" RS2BF2W 47Ω "		H53823470
129	" RS2BF2W 100Ω "		H53823101
R801	Carbon ELR1/4W 100Ω ±5%		H51523101

Symbol	Description	Remarks	Part Code
R802	Carbon ELR1/4W 560Ω ±5%		H51523561
803	" " 820kΩ "		H51523824
804	" " 15kΩ "		H51523153
805	" " 10kΩ "		H51523103
806	" " 5,600Ω "		H51523562
807	" " 3,300Ω "		H51523332
808	" " 6,800Ω "		H51523682
809	" " 560Ω "		H51523561
810	" " " Ω "		"
811	" " 10kΩ "		H51523103
812	" " 3,900Ω "		H51523392
813	" " 22kΩ "		H51523223
814	" " " "		"
815	" " 6,800Ω "		H51523682
816	" " 10kΩ "		H51523103
817	" " 680Ω "		H51523681
818	" " 1,800Ω "		H51523182
819	" " 56kΩ "		H51523563
820	Metal RS1B1W 10kΩ "		H53113103
821	Carbon ELR1/4W1,000Ω "		H51523102
822	" " 1,500Ω "		H51523152
823	" " 470Ω "		H51523471
824	" " 820Ω "		H51523821
825	" R1W 330Ω "		H51643331
826	" R1/2W 100Ω "		H51633101
851	Carbon R1/2W 3,300Ω ±5%		H51633332
852	" ELR1/4W4,700Ω "		H51523472
853	" " 3,300Ω "		H51523332
854	" " 2,700Ω "		H51523272
855	" " 6.8Ω "		H51523068
856	" " 18kΩ "		H51523183
857	" " 10kΩ "		H51523103
858	" " 6,800Ω "		H51523682
859	" " 10kΩ "		H51523103
860	" " 15kΩ "		H51523153
861	" " 1Ω "		H51523010
862	" " 4.7Ω "		H51523047
863	" " 1,500Ω "		H51523152
864	" " 1Ω "		H51523010
865	" " 1,000Ω "		H51523102
866	" " " "		"
867	" " 6,800Ω "		H51523682
868	" " 1,800Ω "		H51523182

Symbol	Description		Remarks	Part Code
R869	Carbon	ELR1/4W 330Ω ±5%		H51523331
870	"	" "		"
871	"	" 100Ω		H51523101
872	"	" 68Ω		H51523680
873	"	R1/2W 2.2Ω		H51633022
874	"	" "		"
875	"	ELR1/4W 6,800Ω		H51523682
876	"	" 100kΩ		H51523104
877	"	" 82kΩ		H51523823
878	"	" 3,300Ω		H51523332
879	"	R1W 10kΩ		H51643103
880	"	ELR1/4W 330kΩ		H51523334
881	"	R1/2W 82kΩ		H51633823
901	Metal	RS3BF3W 47Ω		H53833470
902	Carbon	R1/2W 6,800Ω		H51633682
	Capacitor			
C101	Elyc	16WV47μF		H71131470
102	Cer	50WV0.1μF		H67910012
103	Elyc	10WV220μF		H71121221
104	"	16WV100μF		H71131101
105	"	16WV47μF		H71131470
106		Not Used		
107	Cer	50WV390ρF		H67221059
108	Elyc	25WV220μF		H71141221
109	Plastic	250WV0.47μF		H63433474
110	Cer	50WV330ρF		H67221070
111	Elyc	10WV470μF		H71121471
112	Cer	50WV82ρF		H67221063
113	Plastic	200WV0.1μF		H64132104
114	Elyc	350WV3.3μF		H71451033
115	"	160WV3.3μF		H71211033
801	Elyc	50WV1μF		H71161010
802	Plastic	50WV0.047μF		H64112473
803	Elyc	25WV100μF		H71141101
804	"	50WV1μF		H71161010
805	Plastic	50WV0.01μF		H64112103
806	"	" "		"
807	"	" 0.033μF		H64112333
808	"	" 0.01μF		H64112103
809	Elyc	25WV3.3μF		H71141033
810	"	50WV1μF		H71161010
811	Plastic	50WV0.033μF		H64112333

Symbol	Description		Remarks	Part Code
C812	Cer	500WV180pF		H67132003
813	Plastic	50WV0.0022μF		H64112222
814	"	" 0.068μF		H64112683
815	Elyc	25WV100μF		H71141101
816	Plastic	50WV0.047μF		H64112473
817	Elyc	25WV470μF		H71141471
818	Plastic	630WV0.015μF		H65893007
819	"	" 0.01μF		H65893005
820	Elyc	16WV220μF		H71121221
821	"	25WV2.2μF		H71144022
851	Elyc	50WV1μF		H71161010
852	Plastic	50WV0.033μF		H64112333
853	"	" "		"
854	Tantal	16WV4.7μF		H74633475
855	Elyc	50WV1μF		H71163010
856	"	25WV4.7μF		H71141047
857	"	16WV100μF		H71131101
858	Plastic	50WV0.01μF		H64112103
859	Elyc	16WV330μF		H71131331
860	"	" 100μF		H71131101
861	"	" 33μF		H71131330
862	"	" 1000μF		H71131102
863	Cer	50WV0.1μF		H67910012
864	Elyc	25WV3.3μF		H71141033
865	"	" "		"
866	Plastic	50WV0.022μF		H64112223
867	Elyc	160WV1μF		H71211010
868	"	25WV1000μF		H71141102
869	Cer	500WV56pF		H67233001
901	Elyc	25WV100μF		H71141101
902	"	35WV3300μF		H71920002
	Coils			
L801	1.8mH ±5%			J17151182
802	27μH ±10%			J17272270
803	LC-0147		WIDTH	J17320072
804	LC-0146		H.LIN	J17320071
	Transformers			
T801	HB-12A		H.OSC	J14220010
802	HD-12		H.DRIVE	J14220002
803	TC-0350		FBT	J16310021

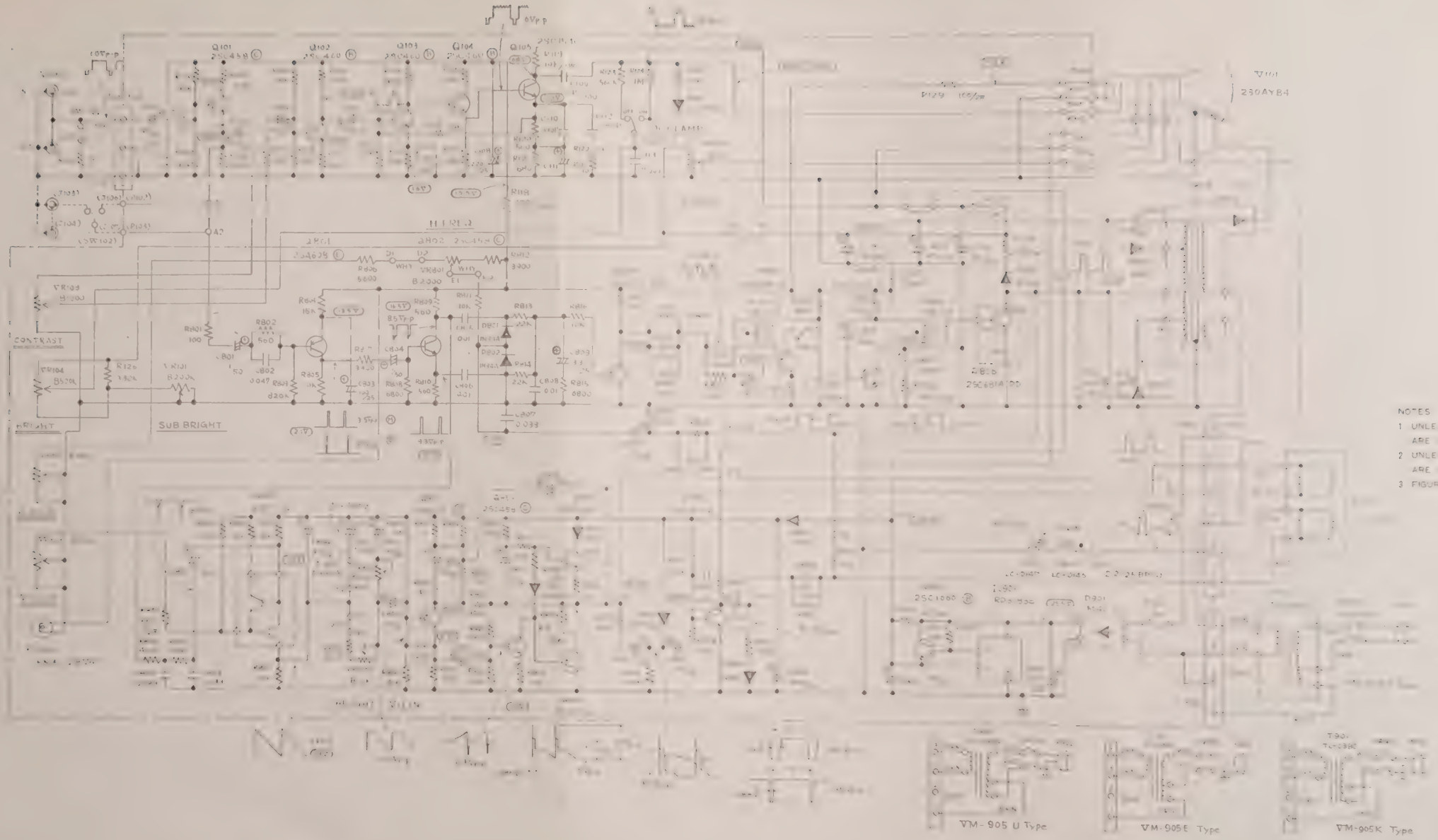
Symbol	Description		Remarks	Part Code
	Connectors			
J108	Socket, Picture Tube	1178#3 (UL)		K15110036
P101	9810#2 (3P)			J44231006
801	9810#5 (6P)			J44231009
901	9810#3 (4P)			J44231007
SW102	Switch	SSFB12-07P		J32000049
F901	Fuse	LC-3A 3A	J,E,K Type	K12422030
"	"	SS1-3A 3A UL	U,C, Type	K12537030
PL901	Pilot Lamp	RM5-28V40(150BrW)		K11160012
	Clip, Fuse	85PN-0815	J,E,K Type 2pcs.	K16250004
	Terminal, Fuse	59BS3015	U,C Type 2pcs.	K17910014

Cabinet Parts List

Symbol	Description		Remarks	Part Code
V101	Picture Tube	230AYB4		H16100007
DY801	Deflection Yoke	LC-0140		K62620022
J801	Base, Connector	34205 (6P) #2		J44232054
	Pin, Terminal	29002 #2	6pcs.	K17910021

Chassis Parts List

Symbol	Description	Remarks	Part Code
R101	Resistor Carbon R1/4W 75Ω ±5%		H51623750
T901	Power Transformer TC-0359	J,U,C Type	J12110039
"	" TC-0380	E,K Type	J12110040
SW101	Switch SS-(F)-12-07	Termination	J32000045
901	" PS-60222B Black	Power	J31020004
P902	Power Cord VFF0.75□8F BLK KP-205	J Type	E92620813
"	" SVT3Pin 8F BLK KP-30	U,C Type	E92220811
"	" NYLHYrd3Pin VM0079 8F	E,K Type	E92120811
J101	Connector, Type IMR-E		J45132015
102	" " "		"
105	Connector, Base 34202(3P)#2		J44232051
109	Connector, Base 34203(4P)#2		J44232052
	Pin Terminal 29002#2	7pcs.	K17910021



NOTES

1 UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS 1/4 WATT
2 UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN F
3 FIGURES IN CIRCLES ARE IN VOLTAGE

FUNDAMENTAL SCHEMATIC DIAGRAM
DIFFERENCES MAY BE FOUND BETWEEN THIS SCHEMATIC DIAGRAM AND THE SERVICING UNIT DUE TO VARIOUS IMPROVEMENTS MADE HEREAFTER

Model VM-905
VIDEO MONITOR
SCHEMATIC DIAGRAM

9. MECHANICAL PARTS LIST

Symbol	Description	Remarks	Part Code
1	Mask, Front	1	1002995B
2	Power Switch	(SW901)	J31020004
3	Lamp Cover	1	4052871A
4	Knob (V.HOLD)	1	4C-44957A
5	" (H.HOLD)	1	"
6	" (BRIGHT)	1	"
7	" (CONT)	1	"
8	Screw, Mask		
	-1) CtP_2 3 × 10NF	2	
	-2) Washer	2	4C-40284-2
9	Screws, Cabinet		
	-1) M3 × 8 NF	4	
	-2) Washer	4	4C-40284-2
10	Cabinet	1	2012209A
11	Screws, Rear Cover		
	-1) M3 × 6 ZCF	4	
	-2) Washer WF21.3	4	
12	Cover, Rear	1	3023387A
13	Connector	(J101)	J45132015
14	"	(J102)	"
15	Switch, Termination	(SW101)	J32000045
16	Screws, Termination Switch		
	-1) CP2 × 5	2	
17	Screws, Main Nameplate		
	-1) M3 × 6 ZCF	2	
18	Nameplate, Main		
	-1) J type	1	4052897D
	-2) U type	1	4052897E
	-3) C type	1	4052897G
	-4) E type	1	4052898C
	-5) K type	1	4052898D
19	Power Cord		
	J type	(P902)	E92620813
	U, C type	"	E92220811
	E, k type	"	E92120811
	(Lug, C5)	1	4044797E
20	Label, Field		
	-1) J type 50 Field	1	4C-38796B
	-2) " 60 Field	1	4C-38796A
21	Label U type only	1	4049186A
22	"	1	
23	Label, Pilotlamp	1	4053109A
24	Picture Tube	(V101)	H16100007
25	Nut, Picture Tube		
	-1) NA1.4	4	
	-2) Washer WB2.4	4	
	-3) " WB21.4	4	

Symbol	Description	Remarks	Part Code
	-4) Washer WB21.6(Adjustment)	(4)	
26	Screws, Power Switch		
	-1) M3 × 6 ZCF	2	
27	Foot 992-0-9-499-02	4	
28	Spring, Coil(Granding)	1	4056125A
	(Lug, B4)	1	4049188D
	(M3 × 6 ZCF)	1	
	(WTA 3 ZTF)	1	4055709D
29	Deflection Yoke	(DY801)	K62620022
30	Socket, Picture Tube	(J108)	K15110036
31	Anode Cap(FBT)	(T803)	J16310021
32	Label, UL (U,C Type)	1	4052899A
33	Holder, PCB NO.219	5	
34	" " NO.720	1	
35	Connector, 3P	(J105)	J44232051
36	Resistor 75Ω, Termination	(R101)	H51623750
37	Label, Fuse (U,C Type)	1	4052915A
	Label. X-Ray (E Type)	1	4037780A
38	Screw, Power Transformer		
	-1) M4 × 8 ZCF	2	
	-2) Washer WF21.4	2	
	-3) " WB2.4	2	
39	Power Transformer J,U,C type	(T901)	J12110039
	E,k type	(")	J12110040
40	Bush, Power Cord		
	-1) Bush, Cord 1	1	4051681A
	-2) Bush, Cord 2(J Type)	1	4051682A
	-3) Band, Cord 3	1	4051683A
	-4) Band, Cord 4	1	4051684A
	-5) Clip Cord	1	X1-2707013
	-6) Tube	1	4051685A
	-7) Screw CBP3 × 8	2	
41	Chassis	1	2012210A
42	Screw, Power Cord(Granding)		
	-1) M4 × 8 ZCF (U,C,E,K Type)	1	
	-2) Washer WTA 4 ZTF	1	4055709F
43	Heat Sink 2(Q854, Q855)	4	4055714A
	-1) Screw, Heat Sink 2 CP3 × 12 NF	2	
	-2) Washer, " WB2.3.NF	2	
	-3) NUT, " NA1.3.NF	2	
44	Heat Sink 1 (Natural) (Q901)	1	4052869A
	Heat Sink 1 (Black) (")	1	4056141A

Symbol	Description	Remarks	Part Code
	-1) Screw, Heat Sink 1 CP3 × 12 NF	1	
	-2) Washer, " WB.2.3 NF	1	
	-3) " " WTA.3.ZCF	1	4055709D
	-4) NUT, " NA1.3.NF	1	
45	Cover, Flyback Trans	1	4052914A
	-1) Screw M3 × 8.NF	1	
	-2) Washer WTA.3.ZTF	1	
46	Nut, Transistor (Q806)		
	-1) Nut NA1.3.NF	2	
	-2) Screw CP.3 × 12.NF	2	
	-3) Washer WB2.3.NF	2	
	-4) Washer WF21.3	1	
	-5) Lug B4	1	4049188D
47	Holder, Pilot Lamp	1	4052900A